ANNEXUE - "A"

TO

BLOCK WORKING MANUAL

OF

SOUTH WESTERN RAILWAY

WORKING INSTRUCTIONS FOR UNIVERSAL FAIL SAFE BLOCK INTERFACE (UFSBI) BASED BLOCK PANEL

FOR

SINGLE LINE

AND

DOUBLE LINE

(Correction Memo No. 07 dated 25.01.2016)

BLOCK PANEL WORKING WITH AXLE COUNTER ON SINGLE LINE

This chapter is for working trains on absolute block system using 'Universal Fail Safe Block Interface (UFSBI) based Block Panel'. These rules must be Studied in conjunction with General (Amendment) and Subsidiary Rules(2006).

1. Knowledge of Rules

Every Railway Servant working on block Panel must be conversant with the rules relating to the block working whether supplied or not with a copy or translation of the rules relating to his duties.

2. Access to and operation of equipment

a) No unauthorised person shall be permitted to have access to or operate signals, points, Block Panel and electrical communication instruments or any other appliance connected with the working of the Railway.

b) No unauthorised person (whether Railway Servant or otherwise) shall enter any block/signal cabin except when requires to do so in connection with the regular duties. All concerned supervisory staff will monitor strict compliance of these instructions through frequent and surprise checks.

3. Principles of Working

(i) The trains are worked on absolute block system of working.

(ii) Axle counters are provided at the either ends of the block section to verify the occupation and clearance of the block section.

(iii) It is not possible to take line clear unless the conditions for taking line clear are fulfilled, that is, unless line is clear of trains running in the same direction not only upto the first Stop Signal at the block Station from which line clear is being taken but also for an adequate distance beyond it, and is also clear of trains running in the direction towards the block station by which such Line Clear is being taken.

(iv) It is not possible to take Last Stop Signal to 'OFF' unless the line clear has been obtained.

(v) The" Last Stop Signal" shall assume "ON" aspect on the entry of the train in the Block Section. The principle of 'One Line Clear One Signal' and 'One Signal One Train' has been followed in the circuitry so that if the Last Stop Signal of the despatching station goes back to "ON," the same cannot be taken 'OFF' unless a fresh Line Clear is obtained, after the complete train clears the block section at the receiving station.

(vi) The last stop signal gets automatically replaced to 'ON' aspect on the entry of the train into the Block Section.

(vii) Replacement of last stop signal to 'ON' position would cause TOL indications to appear on the block panels of both the stations at the either ends of the block section, simultaneously and automatically, indicating the entry of train into the block section.

(viii) Block section is automatically closed on complete train has cleared the block section at the receiving station from which the line clear had been obtained.

(ix) A co-operative control is provided on the block panel to cancel the Line Clear already taken.

(x) A co-operative control for resetting of axle counter is provided on the BPAC reset box.

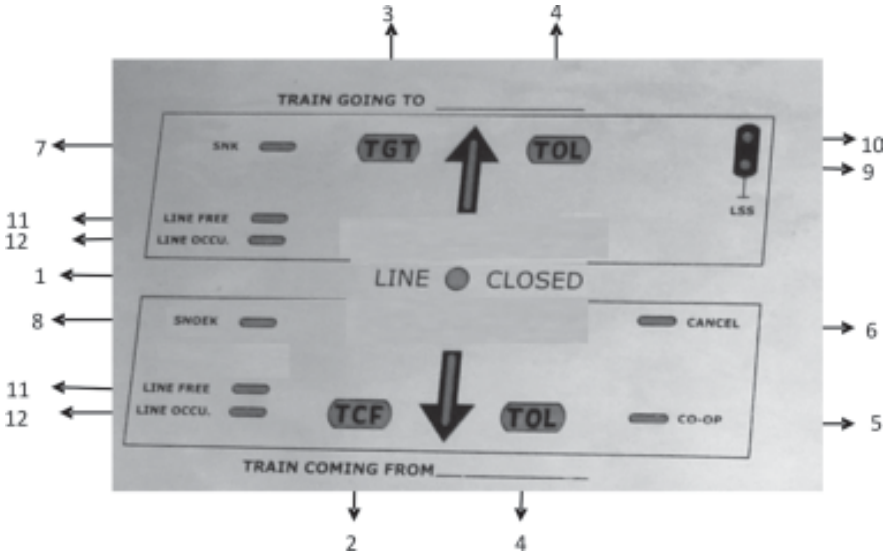
4. Description of the 'Universal Fail Safe Block Interface (UFSBI) based Block Panel:

4.1 Block Panel

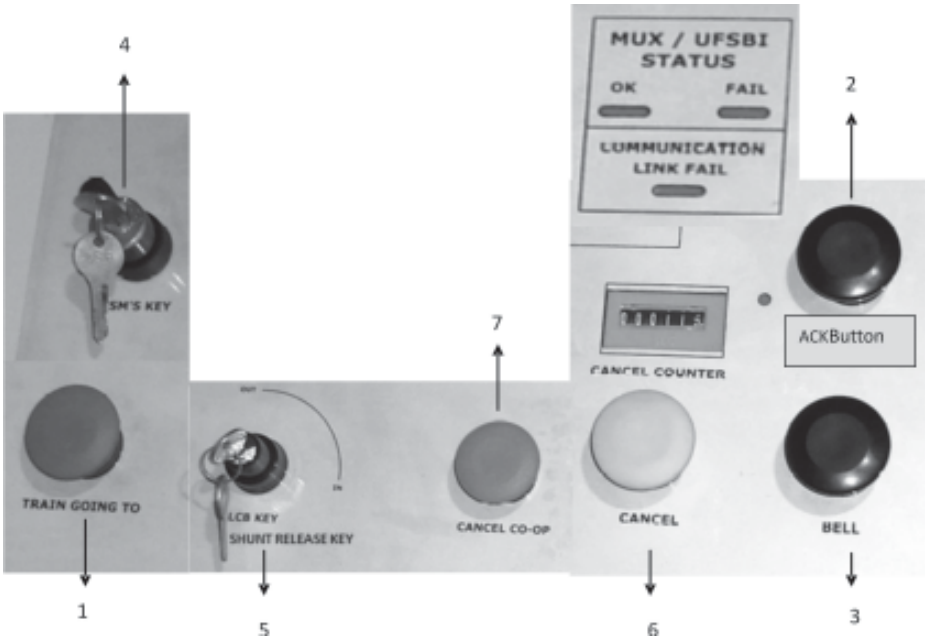
The Block Panel in conjunction with other components like Axle counter and Universal Fail Safe Block Interface (UFSBI)control, command, indicate and provide the information for the operation of a train in block section on the Absolute Block System.Each Block section is provided with two Block Panels, one each at either end of block section. The Block Panel is provided with indications, push buttons, keys, counters and buzzers for providing audio-visual indications and alarms depending on the train movement in the block section. All operations like granting and cancelling Line Clear etc. are done on these panels.

4.2 Block Panel View

4.2 Block Panel Indications



4.3 Block Panel Buttons & Keys



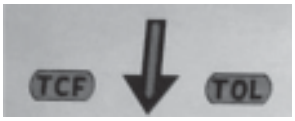
4.5 Block Panel Indication Details & Meaning

1. LINE CLOSED Indication(Yellow):

The indication is provided to indicate the Block Section is free from vehicles and "LINE CLEAR" is not granted/received at train receiving/sending station respectively.

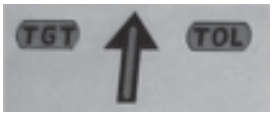
2. TRAIN COMING FROM Indication(Green):

The indication is provided to indicate that a "LINE CLEAR" has been granted by the station in rear. The indication flashes when the Block section has been cleared after arrival of train at receiving station, but associated Signals and their controls are not normal or unintentional in section of Shunt Release Key "IN" at either station. It also flashes when a Cancellation of "LINE CLEAR" is done before entry of a train in to the Block Section. It is provided as arrow head indications pointing down ward for incoming traffic at train receiving station and a rectangular indication named TCF.



3. TRAIN GOING TO Indication(Green):

The indication is provided to indicate that a "LINE CLEAR" has been received. The indication flashes when the Block section has been cleared after arrival of train, but associated Signals and their controls are not normal or unintentional insertion of Shunt Release Key "IN" at either station. It also flashes when a Cancellation of "LINE CLEAR" is done before entry of a train in the Block Section. It is provided as arrow head indications pointing Upward for Outgoing traffic at train sending station and a rectangular indication named TGT.



4. TOL indication(Red):

The indication is provided to indicate that a train has entered in to the Block Section on "LINE CLEAR". It is provided as arrow head and rectangular indications named TOL pointing downward or upward for incoming or outgoing traffic respectively at both Train Receiving and sending stations.

5. Cancel Co-Op Indication(Yellow):

The indication is provided to indicate that Co-operation is extended by the station at other end for cancellation of "LINE CLEAR".

6. Cancel Indication (Yellow):

The indication flashes to indicate that cancellation of "LINE CLEAR" is in progress and would last for 120 seconds. After that it's got steady until the line is closed

7. SNK Indication (Yellow):

The indication is provided to indicate that concerned signal sand there controls are at On/Normal. It is provided near TGT directional arrowhead.

8. SNOEK Indication(Yellow):

The indication is provided to indicate that at other end the advance starter signal and its controls are at On / Normal, Shunt Release Key is in "OUT" position and Shunt key of "EKT" is in "IN" position. It is provided near TCF directional arrow head.

9. L S S Indication(Red):

The indication is provided to indicate that Advance starter signal is at "ON" condition. It is provided in monogram of signal.

10. LSS Indication(Green):

The indication is provided to indicate that Advanced Starter Signal is at "OFF" condition. It is provided in monogram of signal.

11. LINE FREE Indication (Green)

The indication is provided to indicate that there is no train in the block section. It is provided near the TCF arrowhead.

12. LINE OCCUPIED Indication (Red)

The indication is provided to indicate that there is train in the block section or axle counter failure. It is provided near the TCF arrowhead.

13. SHK IN Indication (Red):

The indication is provided to indicate that Shunt key of EKT is "OUT" or Shunt release key is in "IN" position. It is provided near the TGT arrowhead.

14. SHK OUT Indication (Green):

The indication is provided to indicate that Shunt key of EKT is "IN" or Shunt release key is in "OUT" position. It is provided near the TGT arrowhead.

15. MUX/UFSBI Status OK Indication (Green):

The indication is provided to indicate that UFSBI is functional.

16. MUX/UFSBI Status Fail Indication (Red):

The indication is provided to indicate that UFSBI is in failure mode.

17. Communication Link Fail Indication (Yellow):

The steady yellow indication is provided to indicate that Block communication is in working condition and Flashing Yellow indicates communication link failure. S&T staff has to be informed for restoration of communications.

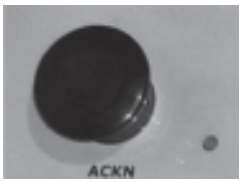
4.6 Block Panel Button Keys, Buzzer, Counter Details & Meaning

1. Train Going To (TGT) push button (Red):

'Train Going To' Push button is coloured red and located on the bottom left hand corner of the block panel then is to be pressed along with 'BELL' push button to obtain line clear, to send a train into the block section concerned.

2. ACK Push Button (Black):

Acknowledgement push button is located on the Right hand side of panel and is to be pressed to acknowledge of audio visual indication for the occupation/ clearance of the block section by a train.



3. BELL Push Button (Black):

It is provided on the bottom right hand corner of the Block Panel. When it is pressed once a bell beat is heard in the single stroke bell at the other end of the block section. The Bell Push button shall be used to:

(a) Transmit the prescribed code of Bell signals.

(b) Get 'Line Clear' when pressed along with 'TGT' push button.

(c) Cancel the 'Line Clear' when pressed with cancellation button.

4. SM's Key:

This key controls the transmission of call attention, "LINE CLEAR" enquiry and "LINE CLEAR" cancellation. When this key is taken out following operations are not possible.

- Transmission of Bell code.
- Cancellation of Line Clear

5. Shunt Release Key:

This key controls "LINE CLEAR" operation and extracting Shunt Key from EKT. When this key is taken out taking of "LINE CLEAR" is possible but taking out the Shunt Key from EKT is not possible. To prevent taking of "LINE CLEAR" or to take out the Shunt Key this Shunt release key has to

put in IN condition. The LSS of sending station will be replaced to 'ON' automatically if already taken OFF for sending the train in the section.

6. **"Cancel" Button (Yellow):**

This Yellow coloured push button is provided to cancel the "Line Clear" when pressed with "Bell" button.

7. **"Cancel Co-op" Button (Green):**

This green coloured push button is provided to extend co-operation from sending station to cancel "Line Clear" at receiving station.

8. **Counter:**

The counter is provided to register the number of "Line Clear" cancellations.

9. **Buzzer:**

Audio alarm is provided to call the attention of SM by the on duty SM of station in rear; in addition, it sounds automatically to draw the attention of SM when the trains enter the block section or clears it.

10. UFSBI Alarm Panel

An UFSBI Alarm panel is provided near the Block Panel. An alarm will sound when there is UFSBI CPU card failure. SM has acknowledge it by pressing the button on the alarm panel and advise the S&T staff concerned for immediate action. Normal Block working will continue.

11. During BPAC failure, the BPAC shall be reset as detailed in the Block Working Manual / Station Working Rules.

5. Sequence of Various Block Operations for Signalling A Train Between Two Stations

5.1 Normal Train movement:

If the block section is clear and the '"LINE CLOSED" indication is displayed on Block Panel at both the stations, the action is taken by the sending station SM as under:

Seq. No.	SENDING STATION	Seq. No.	RECEIVING STATION
1.	The SM shall ensure that the following indications are available on the block panel: - • "LINE CLOSED"– Yellow, • SNK-Yellow, • SNOEK-Yellow, • LINE FREE – Green, • Shunt Key - Green, • Last Stop Signal – Red, • BI (MUX/UFSBI) OK – Green, • Communication Link Fail – OFF	2.	The SM shall ensure that the following indications are available on the block panel: - • "LINE CLOSED"– Yellow, • SNK-Yellow, • SNOEK- Yellow, • LINE FREE – Green, • Shunt Key - Green, • Last Stop Signal – Red.
3.	• Inserts SM key and turns to IN position. SM Key–Green indication is displayed. • Presses BELL button. • Buzzer Sounds. SM advises station at the other end about the intended movement of the train on Telephone and asks for the consent of "LINE CLEAR".	4.	• Buzzer Sounds. • SM acknowledges the 'call Attention' signal by pressing BELL button. • Ensures the following indications are at available on the block panel: (i) "LINE CLOSED" –Yellow, (ii) SNK-Yellow,

			(iii) SNOEK- Yellow, (iv) LINE FREE-Green, (v) Shunt Key Green, (vi) Last Stop Signal – Red, (vii) BI(MUX/UFSBI)OK–Green, (viii)Communication Link Fail: OFF • SM accepts "LINE CLEAR" enquiry and gives PN.
5.	• Presses "BELL" button and "TRAIN GOING TO" button together. • Waits for "TRAIN GOING TO" Indication to light up GREEN.	6.	• ""LINE CLOSED" indication turns 'OFF'. • Green indication of "TRAIN COMING FROM" appears.
7.	• "LINE CLOSED" indication turns 'OFF'. • Green indication of "TRAIN GOING TO" appear. • Releases BELL and TRAIN GOING TO" buttons together. • Advance Starter signal can be taken 'OFF' by SM control. • Yellow SNK indications turns OFF. • Green indication of LSS appears	8.	Yellow SNOKE indication turns OFF.
9.	• Train enters Block Section. • LINE OCCUPIED indication turns RED. • TGT (Green) indication changes to TOL (Red). • LSS – Red. • SECTION Buzzer sounds with indication near ACKN button. • SM presses ACKN to silence the SECTION buzzer and turn 'OFF' aforesaid indication. • Restores all Signal controls to Normal.	10.	• Train enters Block Section. • LINE OCCUPIED indication turns to RED. • TCF (Green) indication changes to TOL (Red). • SECTION Buzzer sounds with indication near ACKN button. • SM shall press ACKN button to silence the SECTION buzzer and to turn 'OFF' aforesaid indication. • SNOKE indication turns -

	• SNK indication turns-Yellow. • Train is in section.		YELLOW. • Train is in section.
11.		12.	• Train is received by reversing the Home Signal Knob. • Yellow SNK indication turns-'OFF'. • Line Free- Green Indication appears • SECTION Buzzer sounds with indication near ACKN button. • SM presses ACKN to silence the SECTION buzzer and aforesaid indication turns 'OFF' • TCF (Red) changes to TCF (flashing green).
13.	• LINE FREE indication turns GREEN. • TOL (Red) changes to TGT (flashing green).	14.	• Normalizes all controls • "LINE CLOSED" indication turns ON. • TCF (flashing green) turns OFF.
15.	• "LINE CLOSED" indication turns ON. • TRAIN GOING TO (Flashing Green) indication turns OFF.	16.	

Note:

1. *When a block section is blocked by the presence of a train in the section or train parting or shunting or opening of level crossing in mid-section or for any other reason, the SHUNT key of EKT shall be taken out and kept in safe custody.*
2. *If the block station at other end refuses the is "LINE CLEAR" enquiry signal, no train shall be allowed to leave until a fresh is "LINE CLEAR" enquiry signal has been given to block station at other end and accepted. On removal of obstruction, the Shunt Key of EKT shall be inserted and turned to IN position and the Shunt Release Key should be taken OUT. SM shall immediately inform SM of other end about the fact, so as to enable him to send a fresh is "LINE CLEAR" signal.*

5.2 "LINE CLEAR" Cancellation:

After a train sending station has taken "LINE CLEAR" ,the receiving station can carry out "LINE CLEAR" cancellation with the consent of sending end station.

Seq. No.	SENDING STATION	Seq. No.	RECEIVING STATION
1.	• Puts back LSS to `ON', if alread y taken `OFF' • Ensures SNK at YELLOW • Advises receiving end station SM about cancellation on telephone after prescribed BELL code	2.	• Ensures SNK at YELLOW • SNOEK at YELLOW • Gives consent on telephone after prescribed BELL code.
3	After verbal consent from other end, SM shall press Cancel Co-operation Button and release on receipt of bell code.	4.	• Wait for cancel Co-operation Indications becoming Yellow light up yellow and press bell & cancel button with SM key IN. • Cancel counter increments. TRAIN COMING FROM indication turns to flashing green. Cancel indication lights up flashing yellow & continues for 120 seconds. Afterwards it turns to steady Yellow.
5.	'TRAIN GOINGTO' indication turns flashing green.		
7.	'TRAIN GOING TO' Indication turns off "LINE CLOSED" indication lights up.	6.	• On expiry of 120 seconds, TRAIN COMING FROM Indication & cancel indication turns off. • "LINE CLOSED" indication lights up.

5.3 Closing of Block after a "Push back" operation:

After a train has been pushed back at the sending station, the sending station advises the receiving station. The receiving station can close the section by pressing BELL and CANCEL button after getting cooperation from the other end station.

Seq. No.	SENDING STATION	Seq. No.	RECEIVING STATION
1.	After the train clears the Block Section and arrive: • LINE FREE indicator turns . GREEN • SECTION buzzer starts ringing. • ACKN indicator lights up.	2.	After the train clears the Block Section: • LINE FREE indicator turns GREEN. • SECTION buzzer starts ringing. • ACKN indicator lights up.
3.	'TRAIN GOING TO' arrow head indication turns to FLASHING GREEN.	4.	'TRAIN COMING FROM' arrow head indication turns to FLASHING GREEN.
5.	• Acknowledges the buzzer by pressing ACKN button • ACKN indicator turns off.	6.	• Acknowledges the buzzer by pressing ACKN button. • ACKN indicator turns off.
7.	Advises receiving end station SM about cancellation on telephone after prescribed BELL code.	8.	Agrees to request & ensures: • SNK indicator YELLOW, • SNOEK indicator YELLOW • SHUNT KEY indicator GREEN • and Gives consent on telephone after prescribed BELL code
9.	After verbal consent from receiving end SM, Ensure: • SNK indication is YELLOW, • SNOEK indication is YELLOW, • SHUNT KEY indication is GREEN. Then Press Cancel Co-Operation button and release it on receipt of BELL code.	10.	• CO-OP to light up YELLOW. • Presses BELL & CANCEL button with SM key IN. • CANCEL COUNTER increments. • CANCEL indication lights up FLASHING YELLOW & continues flashing for 120 seconds.
11.	• TRAIN GOING TO arrow head indication turns off. • "LINE CLOSED" indication lights up.		• On expiry of 120 seconds, TRAIN COMING FROM arrow head indication and CANCEL indication turns off. • '"LINE CLOSED' indication lights up.

5.4 Block Back Operation:

The SM, who intends to Block Back the line, shall inform the SM of station at other end on telephone for permission to Block Back, who will acknowledge the message and grant permission supported by a private number. SM takes out the Shunt key from the EKT and keeps in safe custody. The SM will then issue necessary authority to Loco Pilot of train to perform shunting in Block Section. On completion of shunting, section clear message will be sent to SM of station at other end on telephone about obstruction removed supported by a private number, who in turn will acknowledge the same supported by a private number. Thereafter, SM will insert Shunt key in EKT and turn to `IN' position and takes out the shunt release key. All the entries in Train Signal Register (TSR) for this operation should be make in RED ink. The reasons for Block Back shall be recorded in remarks column against each entry.

Seq. No.	STATION IN REAR	Seq. No.	STATION INTENDIN BLOCK BACK
2.	Block Panel displays: • "Line Closed" - Yellow • Line Free- Green • SNOEK - Yellow • Shunt Key- Green	1.	Block Panel displays: • "Line Closed" - Yellow • Line Free- Green • SNOEK - Yellow • Shunt Key – Green
4.	Acknowledges call attention / attend telephone signal.	3.	Inserts SM key& turns, Gives call attention /attend telephone signal.
6.	Attends telephone	5	Attends telephone
8.	Acknowledges & gives consent supported with private number.	7	Inform intention to perform shunting in Block Section.
10	SNOEK turns off.	9	• Takes Shunt Key 'OUT' from EKT and keep in safe custody. • Issue necessary authority to Loco Pilot of train to perform shunting in Block Section. • Shunt Key indication turns to RED.
12	On entry of train in Block Section: • SECTION buzzer starts ringing & • ACKN indication lights up. • LINE OCCUPIED indication turns to RED. • "LINE CLOSED indication	11.	On entry of train in Block Section, • SECTION buzzer starts ringing& • ACKN indication lights up. • LINE OCCUPIED indication turns to RED. • "LINE CLOSED indication

	turns off. • Acknowledges the buzzer by pressing ACKN button. • ACKN indication turns off.		turns off. • Acknowledges the buzzer by pressing ACKN button. • ACKN indication turns off.
14	On clearing of Block Section: • SECTION buzzer starts ringing &"LINE CLOSED indication lights up. • ACKN indication lights up. • LINE FREE indication turns to GREEN."LINE CLOSED" indication lights up YELLOW. • Acknowledges the buzzer by pressing ACKN button. •ACKN indication turns off.	13.	On clearing of Block Section: • SECTION buzzer starts ringing & "LINE CLOSED" indication lights up. • ACKN indication lights up • LINE FREE indicator turns to GREEN. • "LINE CLOSED" indication lights up YELLOW. • Acknowledges the buzzer by pressing ACKN button. • ACKN indication turns off.
16	Acknowledges call attention/ attend telephone signal.	15	• On completion of shunting, SM verifies the line between opposite STARTER (if any) / Shunt signal or Stop Board/ Fouling mark and FSS, free from any vehicle. • Inserts SM key & turns, Gives call attention / attend telephone signal.
18	Attends telephone.	17	Attends telephone.
20	Acknowledges supported by a private number.	19	Inform shunting is completed, supported by a private number.
22	SNOEK lights up YELLOW.	21	• Inserts Shunt key of EKT & turns to `IN'. • Shunt Key indication turns to GREEN.

5.5 Shunting of train

Where shunt signals are not provided for shunting on line leading towards Block section, the Loco Pilot of shunting train shall be given shunting order at the foot of STARTER SIGNAL/ STOP BOARD/FOULING MARK before allowing any shunting.

While shunting, the LAST STOP SIGNAL should be kept at ON.

i. Shunting of Train upto Last Stop Signal

Shunt Key of EKT shall be taken OUT and kept in safe custody. The Loco Pilot of shunting train shall be given shunting order to shunt upto LSS. On completion of shunting, the line between Starter/Shunt Signal/Stop Board/ Fouling mark and LSS should be checked free from any vehicle. Shunt Key of EKT shall be inserted and turned to IN position. When an " IS LINE CLEAR" enquiry is received from Block Station at other end of block section, permission for shunting up to LSS shall be granted only after compliance of GR 8.09 & 8.10 and as permitted by Station Working Rules (SWR).

ii. Shunting Behind A Train

Shunting behind a train should be performed with message to station at other end. SM shall take out Shunt Key of EKT after entry of train in block section passing LSS. Hand over the key to Loco Pilot of shunting train along with shunting order. On completion of shunting, Loco Pilot of shunting train hands over the Shunt Key of EKT back to SM. SM ensures clearance of line between Starter/Shunt Signal/Stop Board/Fouling mark and LSS from any vehicle. The message regarding completion of shunting shall be conveyed to station at other end. SM inserts Shunt Key of EKT and turns to IN position. In case train arrives at station at other end before completion of shunting, TRAIN GOING TO/TRAIN COMING FROM arrow head indication will remain at RED, till shunting train clears the section. During such period line shall be Blocked Back.

iii. Shunting Of Train Beyond Last Stop Signal

The shunting in advance of LSS is done under block back operation.

iv. Shunting Of Train in face of an approaching Train

Shunting in face of an approaching train, towards LSS, where permitted in SWR by special instructions, can be performed. The Loco Pilot of shunting train shall be given shunting order to shunt upto LSS. On completion of shunting, the line between Starter/Shunt Signal/Stop Board/Fouling Mark and First Stop Signal should be checked free from any vehicle. Shunting in face of an approaching train, beyond LSS and upto FSS can be performed only, when approaching train has been brought to a stop at FSS of the station. Whenever, such shunting is to be performed, SM key shall be taken OUT and kept in safe custody. The Loco Pilot of shunting train shall be given shunting order to shunt upto FSS. On completion of shunting, the line between Starter/

Shunt Signal/ Stop Board/Fouling Mark and FSS Signal should be checked free from any vehicle and only then, SM key shall be inserted and turned to IN position.

v. Shunting of Train beyond LSS in cases other than shunting behind a train or shunting in face of approaching train

The shunting should be done under Block Back operation only.

6. BLOCK FAILURE

6.1 Failure of the Block panel and Last Stop Signal

(a) Failure of Block Panel :

The block panels must be considered as defective in the following cases:

(i) When no indication is available on the Block Panel.

(ii) When none of the indications viz. Train Coming From/Train Going To appears on the Block Panel except 'Line Free'.

(iii) When no train has entered into the Block Sections, but the Block Panel shows' Line Occupied' RED indication and this indication persists even after BPAC resetting has been tried.

(iv) When TRAIN GOING TO or TRAIN COMING FROM indications do not appear by appropriate action though condition for asking' LINE CLEAR' and granting permission to approach are available.

(v) TRAIN GOING TO or TRAIN COMING FROM indicator does not turn to RED to give TRAIN ON LINE on the entry of train into Block Section at either of the station.

(vi) When a train has arrived at the receiving station but the Block Panel still shows TRAIN ON LINE RED indication and persists even after Resetting of BPAC has been done.

(vii) When a train has arrived at the receiving station but the Block Panel shown FLASHING GREEN indication even after ensuring SNKE indicator & Shunt release key IN at both the station.

(viii) Total failure of communication during which train shall be worked as per extent rules in force on the Railway.

(ix) Any damage is seen or reported to block equipment i.e. Block Panel, Axle Counter, Track Devices and Axle counter equipment etc.

(x) When Last Stop Signal cannot be kept at 'ON' during its suspension/ disconnection.

(xi) When Last stop Signal of the station does not go back to 'ON' position on the entry of a train into the Block Section.

(xii) When the Bell Code signals are received indistinctly or are not received.

Note:

(a) *In all the above cases, the Block Panel must be treated as defective for block working and trains must be dealt with by taking Line Clear on Electrical communication equipments provided and by following provisions of* ***GR 14.13.***

(b) *In respect of the failure indicated in the item number (viii) of above para trains must be dealt with under the extant rules as outlined in* ***SR.6.02.***

(c) In respect of the failures indicated in the item nos (v), (ix) & (x) mention above, all efforts must be made to keep LSS in the 'ON' position. If it is not possible, then a competent railway servant should be deputed with red Hand Signal to take his position at the foot of the LSS to warn loco pilots of the approaching trains. In addition, all trains in the relevant directions should be stopped at home signal and after ensuring that they have come to stop, the home signal should be cleared to caution aspect only. The starters should not be taken off and the trains should be despatched by issue of relevant paper authority to pass the starters and the LSS at ON. Caution Order should also be issued to the Loco Pilot about the defect of the LSS.

(d) The Block Panel should not be restored for normal working until competent signalling staffs has tested & certified fit.

(e) In all the cases indicated above failures should be informed to S&T staff immediately.

(b) Failure of Last Stop Signal

The Last Stop Signal must be considered to have failed in the following cases:

(i) The Last Stop Signal cannot be taken 'OFF' even though Line Clear has been obtained.

(ii) The Last Stop Signal can be cleared without getting Line Clear.

(iii) The Last Stop Signal does not restore to 'ON' position after the train enters the Block Section.

Note:

(a) In all the cases indicated above failures should be informed to S & T staff immediately.

(b) In respect of the cases indicated in paras (b) (i) & (iii) above the precautions indicated in Note No. (iii) and (iv) under the para,I (a) dealing with failures of the Block panels should be strictly adhered to.

7. Suspension of Block working/Last Stop Signal

(a) Suspension of Block Working

Block Working must be suspended and trains dealt with in accordance with the extant instructions in the following cases:

(i) When light vehicles such as material lorries, motor trolleys, tie-tamping machines, rail motorcars, Tower wagon (4-wheeler), etc., has to run in the section, these shall be worked on Paper Line Clear.

(ii) An Accident in mid-section.

(iii) When any part of the Block Equipment is to be opened for repairs, it shall be done only under duly accepted disconnection notice. Block Panel working shall only be resumed by a Railway servant authorized as per extant rules in force.

Note:

As soon as the cause of suspension of block working is removed normal working can be restored by SM.

(b) Suspension of last Stop Signal

The last stop signal shall be considered and deemed to have been suspended in the following cases:-

(i) When the Last Stop Signal has been undertaken for repairs by S & T staff,

(ii) During the block back,

(iii) Mid-Section accident.

(iv) When the material lorries/trolleys, tie-tamping machines or tower wagon has to run in the section.

Note: *As soon as the cause of suspension of LSS is removed normal working can be restored by SM.*

BLOCK PANEL WORKING WITH AXLE COUNTER ON DOUBLE LINE

This chapter is for working trains on absolute block system using 'Universal Fail Safe Block Interface (UFSBI) based Block Panel'. These rules must be studied in conjunction with General (Amendment) and Subsidiary Rules(2006).

1. Knowledge of Rules

Every Railway Servant working on block Panel must be conversant with the rules relating to the block working whether supplied or not with a copy or translation of the rules relating to his duties.

2. Access to and operation of equipment

a) No unauthorised person shall be permitted to have access to or operate signals, points, Block Panel and electrical communication instruments or any other appliance connected with the working of the Railway.

b) No unauthorised person (whether Railway Servant or otherwise) shall enter any block/signal cabin except when requires to do so in connection with the regular duties. All concerned supervisory staff will monitor strict compliance of these instructions through frequent and surprise checks.

3. Principles of Working

(i) The trains are worked on absolute block system of working.

(ii) Axle counters are provided at the either ends of the block section to verify the occupation and clearance of the block section.

(iii) It is not possible to take line clear unless the conditions for taking line clear are fulfilled, that is, unless line is clear of trains running in the same direction not only up to the first Stop Signal at the block station from which line clear is being taken but also for an adequate distance beyond it.

(iv) It is not possible to take Last Stop Signal to ‘OFF’ unless the line clear has been obtained.

(v) The " Last Stop Signal "shall assume "ON" aspect on the entry of the train in the Block Section. The principle of 'One Line Clear One Signal' and 'One Signal One Train' has been followed in the circuitry so that if the Last

Stop Signal of the despatching station goes back to "ON," the same cannot be taken 'OFF' unless a fresh Line Clear is obtained, after the complete train clears the block section at the receiving station.

(vi) The last stop signal gets automatically replaced to 'ON' aspect on the entry of the train into the Block Section.

(vii) Replacement of last stop signal to 'ON' position would cause TOL indications to appear on the block panels of both the stations at the either ends of the block section, simultaneously and automatically, indicating the entry of train into the block section.

(viii) Block section is automatically closed on complete train has cleared the block section at the receiving station from which the line clear had been obtained.

(ix) A co-operative control is provided on the block panel to cancel the Line Clear already taken.

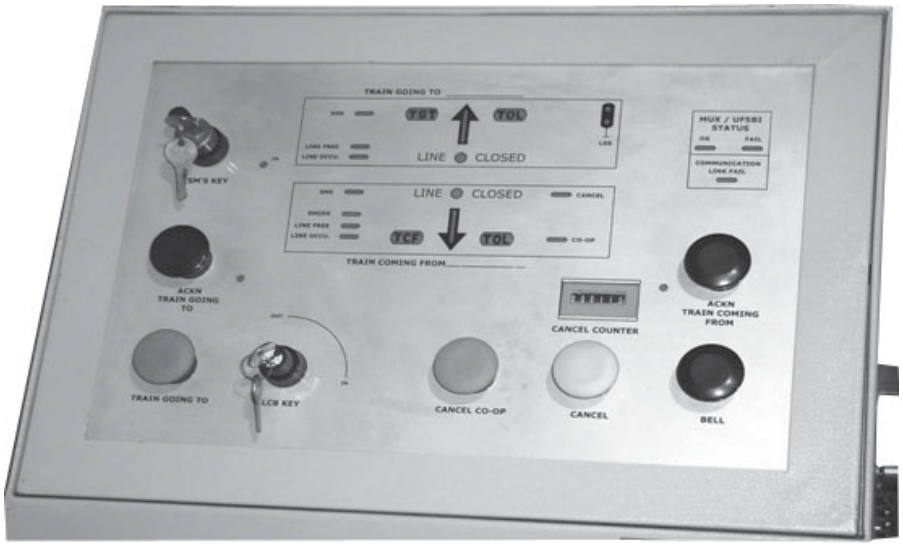
(x) A co-operative control for resetting of axle counter is provided on the BPAC reset box.

4. Description of the 'Universal Fail Safe Block Interface (UFSBI) based Block Panel:

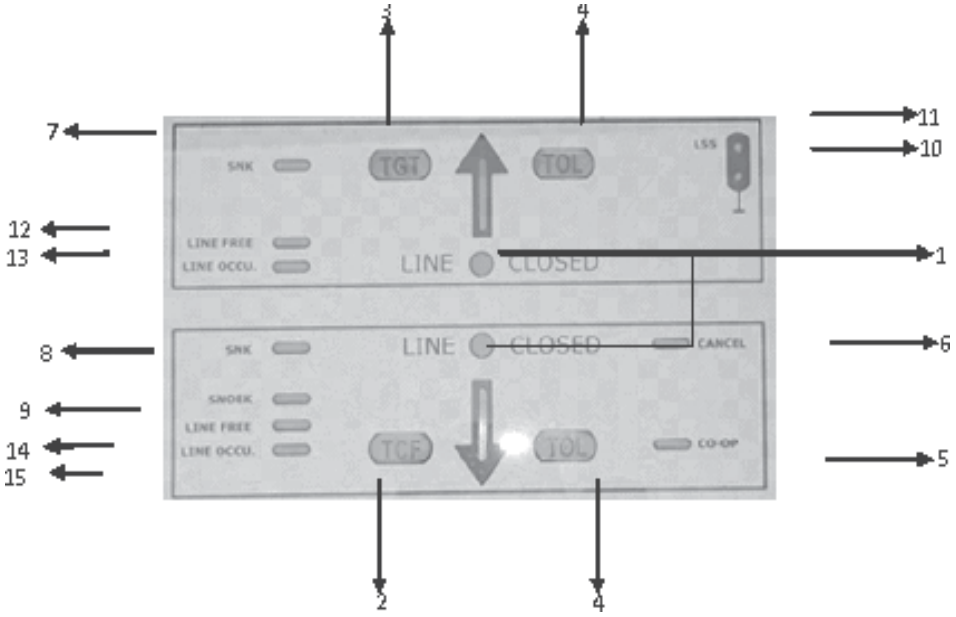
4.1 Block Panel.

The Block Panel in conjunction with other components like Axle counter and Universal Fail Safe Block Interface (UFSBI) control, command, indicate and provide the information for the operation of a train in block section on the Absolute Block System. Each Block section is provided with two Block Panels, one each at either end of block section. The Block Panel is provided with indications, push buttons, keys, counters and buzzers for providing audio-visual indications and alarms depending on the train movement in the block section. All operations like granting and cancelling Line Clear etc. are done on these panels.

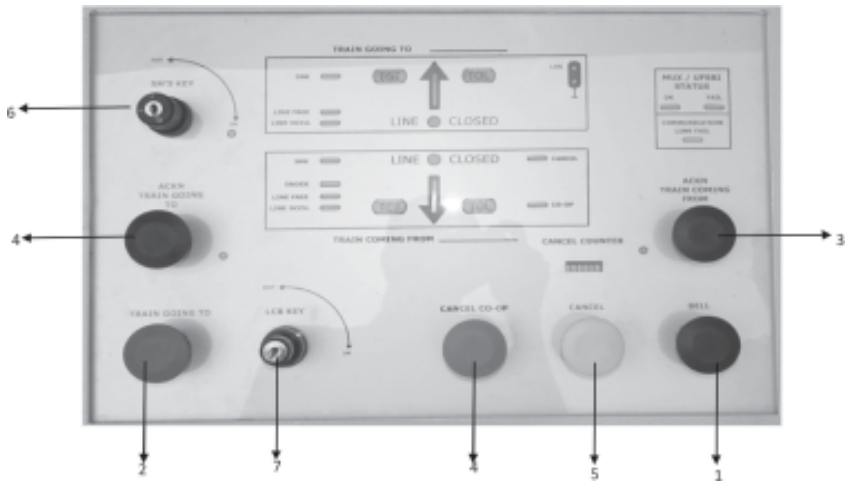
4.2 Block Panel View.



4.3 Block Panel Indications



4.4 Block Panel Buttons & Keys



4.5 Block Panel Indication Details & Meaning

1. **"LINE CLOSE" Indication (Yellow):** The indication is provided to indicate the Block Section is free from vehicles and "LINE CLEAR" is not granted / received at train receiving / train sending station respectively. Two such circular indications are provided in between the directional arrowheads for dispatch and receive Line respectively.

2. **TRAIN COMING FROM Indication (Green):** The indication is provided to indicate that a "LINE CLEAR" has been granted. The indication flashes when the Block section has been cleared after arrival of train, but associated Signals and their controls are not normal at either station or LCB Key is taken "OUT" at train receiving station. It also flashes when a Cancellation of "LINE CLEAR" is in progress before entry of a train in the Block Section. It is provided as arrowhead indications pointing downward for incoming traffic at train receiving station and a rectangular indication named TCF.

3. **TRAIN GOING TO Indication (Green):** The indication is provided to indicate that a "LINE CLEAR" has been received. The indication flashes when the Block section has been cleared after arrival of train, but associated Signals and their controls are not normal at either station or LCB Key is taken "OUT" at train receiving station. It also flashes when a Cancellation of "LINE CLEAR" is done before entry of a train in the Block Section. It is provided as arrowhead indications pointing Upward for Outgoing traffic at train sending station and a rectangular indication named TGT.

4. **TOL Indication (Red):** The indication is provided to indicate that a train has entered the Block Section on "LINE CLEAR". It is provided as arrowhead and rectangular indications named TOL pointing downward or upward for incoming or outgoing traffic respectively at both Train Receiving and sending stations.

5. **Cancel CO-OP Indication (Yellow):** The indication is provided to indicate that Co-operation is extended by the train sending station for cancellation of "LINE CLEAR".

6. **Cancel Indication (Yellow):** The indication flashes to indicate that cancellation of "LINE CLEAR" is in progress for 120 seconds. This indication become steady after 120 seconds from the initiation of Line Clear Cancellation, till the system goes to Line Close condition.

7. **SNK (near TGT) Indication (Yellow):** The indication is provided to indicate that Advance starter signal and all of its controls are at On/Normal. It is provided near TGT directional arrowhead.

8. **SNK (near TCF) Indication (Yellow):** The indication is provided to indicate that Home signal and all of its controls are at On/Normal. It is provided near TCF directional arrowhead

9. **SNOEK Indication (Yellow):** The indication is provided to indicate that, at other end the advance starter signal and its controls are at On/Normal. It is provided near TCF directional arrowhead.

10. **LSS Indication (Red):** The indication is provided to indicate that Advance starter signal is at "ON" condition. It is provided in monogram of signal.

11. **LSS Indication (Green):** The indication is provided to indicate that Advance starter signal is at "OFF" condition. It is provided in monogram of signal.

12. **LINE FREE (near TGT) Indication (Green):** The indication is provided to indicate that there is no train in the block section on the dispatch line. It is provided near the TGT arrowhead.

13. **LINE OCCUPIED (near TGT) Indication (Red):** The indication is provided to indicate that there is train in the block section or axle counter failure in the dispatch Line. It is provided near the TGT arrowhead.

14. **LINE FREE (near TCF) Indication (Green):** The indication is provided to indicate that there is no train in the block section on the receive line. It is provided near the TCF arrowhead.

15. **LINE OCCUPIED (near TCF) Indication (Red):** The indication is provided to indicate that there is train in the block section or axle counter failure in the receive Line. It is provided near the TCF arrowhead.

16. **MUX / UFSBI Status OK Indication (Green):** The indication is provided to indicate that UFSBI is working OK.

17. **MUX / UFSBI Status Fail Indication (Red):** The indication is provided to indicate that UFSBI is failed.

18. **Communication Link Fail Indication (Yellow):** The indication is provided to indicate that communication between to Block instrument is failed.

4.6 Block Panel Button Details & Meaning:

1. **"Bell" Button (Black):** The Push button is provided to transmit call attention to other end of the block, to take "LINE CLEAR" when pressed along with "Train Going To (TGT)" Push button and to cancel "LINE CLEAR" when pressed along with "Cancel" button".

2. **"Train Going To" Button (Red):** The Push button is provided to transmit "LINE CLEAR" enquiry to station in advance for taking "LINE CLEAR" when pressed along with "Bell" button.

3. **"ACKN" Train Coming from Button (Black):** The Push button is provided to mute the section buzzer on occupation or clearance of the block section. This one is for acknowledging receiving (Train Coming from) line.

4. **"ACKN" Train Going to Button (Black):** The Push button is provided to mute the section buzzer on occupation or clearance of the block section. This one is for acknowledging despatch (Train Going to) line.

5. **"Cancel Co-op" Button (Green):** The Push button is provided to extend co-operation from sending station to cancel "LINE CLEAR" at receiving station.

6. **"Cancel" Button (Yellow):** The Push button is provided to cancel the "LINE CLEAR" when used in conjunction with "Bell" button at despatch station.

7. **"SMs" Key:** This key controls the transmission of call attention, "LINE CLEAR" enquiry and "LINE CLEAR" cancellation.

8. **"LCB" Key:** This key controls the granting of "LINE CLEAR" at receiving station. When this key is taken out, taking of "LINE CLEAR" from the other end is not possible. Line Close is also not possible for receiving line if this key is taken out at receiving station.

9. **Counter:** The counter is provided to register the number of "LINE CLEAR" Cancellation.

10. **Buzzer:** Audio alarm is provided for call attention sent by other end SM & to register the occupation and clearance of the train for both the dispatch and receive lines.

5. Sequence of operations of signalling a train between two stations

5.1 Normal Train movement:

If the block section is clear and the 'LINE CLOSED' indication is displayed on Block Panel at both the stations, the action is taken by the sending station SM as under:

	SENDING STATION		**RECEIVING STATION**
1.	SM ensures • LINE CLOSED indication . YELLOW • SNK indication YELLOW, • SNOEK indication YELLOW, • LINE FREE indication GREEN • UFSBI / Mux OK indication GREEN • Communication Link fail OFF. SM inserts SM key & turns to IN a) SM sends 'Call Attention' signal to receiving station by pressing BELL button.	2.	SM inserts SM key & turns to IN. (a) SM acknowledges the 'Call Attention' signal by pressing BELL button.
3.	SM sends 'Attend Telephone' signal by pressing BELL button.	4.	SM acknowledges by pressing BELL button and attends telephone.
5.	SM attends telephone and advises station in advance about the intended movement of the train on telephone & asks for LINE CLEAR	6.	Exchanges information regarding train movement and ensures • LINE CLOSED indication YELLOW, • SNK indication YELLOW, • SNOEK indication YELLOW, • LINE FREE indication GREEN • UFSBI / Mux OK indication

			GREEN • Communication Link fail Extinguished • Turn LCB Key IN. • Give PN for Line Clear.
7.	SM presses BELL & TRAIN GOING TO buttons until 'TRAIN GOING TO' arrowhead indication lights up GREEN. (If aforesaid indicator does not appear after 3 seconds (approx.) of pressing the buttons, SM releases the buttons and rechecks conditions at his station and asks station at other end to recheck the conditions for granting of LINE CLEAR.)	8.	'LINE CLOSED' indicator turns off and 'TRAIN COMING FROM' arrowhead indication GREEN.
9.	'LINE CLOSED' indicator turns off. 'TRAIN GOING TO' arrowhead indication lights up GREEN. Releases BELL & TRAIN GOING TO buttons.		
10.	Takes LSS to `OFF'. Train enters the Block Section. LSS replaces to 'ON'. LINE OCCUPIED indicator turns to RED . SECTION buzzer sounds & 'TRAIN GOING TO' arrowhead indication turns RED. ACKN indication lights up. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off. Puts back the LSS controls to Normal. Ensures SNK lights up YELLOW.	11	LINE OCCUPIED indicator turns to RED . SECTION buzzer sounds & 'TRAIN COMING FROM' arrowhead indication turns RED. ACKN indication lights up. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off. SNOEK lights up YELLOW Takes reception signal `OFF' to receive the train. Train passes Home Signal. Home Signal replaces to `ON'. Train clears the Block Section including Block overlap

13.	SECTION buzzer sounds. ACKN indication lights up YELLOW. LINE FREE indicator turns to GREEN. `TRAIN GOING TO' arrowhead indication turns to FLASHING GREEN. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.	12	SECTION buzzer sounds. ACKN indication lights up YELLOW & LINE FREE indicator turns to GREEN. 'TRAIN COMING FROM' arrowhead indication turns to FLASHING GREEN. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.
15.	SNOEK indication lights up YELLOW. `TRAIN GOING TO' arrowhead indication turns off. `LINE CLOSED' indication light up.	14	Replaces all controls pertaining to reception of train to Normal. SNK indication lights up YELLOW. `TRAIN COMING FROM' arrowhead indication turns off. 'LINE CLOSED' Indication lights up.

5.2 Refusal to 'Line Clear Enquiry':

When the line is being blocked by the presence of a train in the section or train parting, or shunting or opening of level crossing in mid-section or for any other reason, the LCB key is taken out and kept in safe custody. On removal of obstruction, SM immediately informs SM in rear about the fact. Puts LCB Key IN so as to enable him to send a fresh IS LINE CLEAR enquiry.

5.3 Closing of Block after a "Push Back" operation

After a train has been pushed back at the sending station, the sending station advises the receiving station. The receiving station closes the section by pressing BELL and CANCEL button after getting cooperation from the sending station.

5.4 Method of "Push back" operation

	SENDING STATION		RECEIVING STATION
1.	Train clears the Block Section. LINE FREE indicator turns GREEN. SECTION buzzer sounds. ACKN indication lights up. 'TRAIN GOING TO' arrowhead indication turns to FLASHING GREEN. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off. Ensures that the SNK indication is YELLOW	2.	Train clears the Block Section. LINE FREE indicator turns GREEN. SECTION buzzer sounds. ACKN indication lights up. 'TRAIN COMING FROM' arrowhead indication turns to FLASHING GREEN. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.
3.	Advises other end station SM to close the Block, on telephone after Call attention buzzer sounds.	4.	On request from sending station SM about closing of the Block, on telephone, after Call attention buzzer sounds. Ensure SNK indicator YELLOW, SNOEK indicator YELLOW,
5.	After verbal consent from other end SM Ensure SNK indication YELLOW, SNOEK indication YELLOW, Presses CANCEL CO-OP button and releases on receipt of Call attention buzzer.	6.	CO-OP indication turns YELLOW. Presses BELL & CANCEL button with SM key IN. CANCEL COUNTER increments. CANCEL indication turns FLASHING YELLOW&continues flashing for 120 seconds.
8.	TRAIN GOING TO arrowhead indication turns off. LINE CLOSED indication glows.	7.	On expiry of 120 seconds, TRAIN COMING FROM arrowhead indication and CANCEL indication turns off. 'LINE CLOSED' indication glows.

5.5 Block Back Operation

The SM, who intends to Block Back the line, informs the SM of station in rear on telephone for permission to Block Back, who acknowledges the message and

grants permission supported by a private number. SM takes LCB key OUT and keeps in safe custody. The SM will then issue necessary authority to Loco Pilot of train to perform shunting in Block Section.

On completion of shunting, section clear message will be sent to SM of station in rear on telephone about obstruction removed supported by a private number, who in turn will acknowledge the same supported by a private number. Thereafter SM will insert LCB key and turn to `IN' position.

All the entries in Train Signal Register (TSR) for this operation is made in RED ink. The reasons for Block Back shall be recorded in remarks column against each entry.

	Station in REAR		**Station intending BLOCK BACK**
2.	Block Panel displays; LINE CLOSED - YELLOW LINE FREE - GREEN SNK - YELLOW	1.	Block Panel displays; LINE CLOSED - YELLOW LINE FREE - GREEN SNOEK - YELLOW
4.	Acknowledges call attention / attend telephone signal.	3.	Inserts SM key & turns 'ON' Gives call attention / attend telephone signal.
6.	Attends telephone.	5	Attends telephone.
8.	Acknowledges & gives consent by private number.	7	Inform intention to perform shunting in Block Section.
		9	Takes LCB Key 'OUT' and keeps in safe custody. Issue necessary authority to Loco Pilot of train to perform shunting in Block Section.
11.	On entry of train in Block Section, SECTION buzzer sounds & ACKN indication glows. LINE OCCUPIED indication turns to RED. LINE CLOSED indication turns off Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.	10.	On entry of train in Block Section, SECTION buzzer sounds & ACKN indication glows. LINE OCCUPIED indication turns to RED. LINE CLOSED indication turns off. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.
13.	On clearing of Block Section. SECTION buzzer sounds & LINE	12.	On clearing of Block Section. SECTION buzzer sounds & LINE

	CLOSED indication lights up. ACKN indication lights up. LINE FREE indication turns to GREEN. LINE CLOSED indication turns YELLOW. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.		CLOSED indication glows. ACKN indication lights up. LINE FREE indicator turns to GREEN. LINE CLOSED indication turns YELLOW. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.
15.	Acknowledges call attention / attend telephone signal.	14.	On completion of shunting, SM verifies the line between opposite STARTER (if any)/ Shunt signal or Block Section Limit Board, Stop Board/ Fouling mark and First Stop Signal free from any vehicle. Give call attention / attend telephone signal.
17.	Attends telephone.	16.	Attends telephone.
19.	Acknowledges supported by the Private Number.	18.	Inform shunting is completed supported by a Private Number.
		20.	Inserts LCB KEY & turns to `IN'.

5.6 Block Forward

The SM, who intends to Block forward the line, shall inform the SM of station in advance on Telephone for permission to Block forward, who will acknowledge the message and grant permission supported by a private number. The SM of advance station takes LCB key OUT and keeps in safe custody. The SM of this station will then issue necessary authority to Loco Pilot of train to perform shunting in Block Section.

On completion of shunting, message will be sent to SM of station in advance on telephone about obstruction removed supported by a private number, who in turn will acknowledge the same supported by a private number. Thereafter SM of advance station will insert LCB key and turn to IN position.

All the entries in Train Signal Register for this operation should be made in RED ink. The reasons for Block forward shall be recorded in remarks column against each entry.

	Station intending BLOCK FORWARD		Station in advance
1.	Block Panel displays; LINE CLOSED – YELLOW LINE FREE – GREEN	2.	Block Panel displays; LINE CLOSED – YELLOW LINE FREE – GREEN
3.	Inserts SM key and turns, Gives call attention /attend telephone signal.	4.	Acknowledges call attention / attend telephone signal.
5.	Attends telephone.	6.	Attends telephone.
7.	Inform intention to perform shunting in Block Section.	8.	Acknowledges and gives consent by Private Number.
10.	Issue necessary authority to Loco Pilot of train to perform shunting in Block Section.	9.	The LCB Key is taken out and kept in safe custody.
11.	On entry of train in Block section, SECTION buzzer starts ringing and LINE CLOSED indication turns off. ACKN indication lights up. LINE FREE indication turns to RED. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.	12.	On entry of train in Block section, SECTION buzzer starts ringing and LINE CLOSED indication turns off. ACKN indication lights up Yellow. LINE FREE indication turns to RED. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.
13.	On clearing of Block Section. SECTION buzzer starts ringing and LINE CLOSED indication lights up Yellow. ACKN indication lights up Yellow. LINE FREE indication turns to GREEN. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.	14	On clearing of Block Section SECTION buzzer starts ringing and LINE CLOSED indication lights up Yellow. ACKN indication lights up Yellow. LINE FREE indication turns to GREEN. Acknowledges the buzzer by pressing ACKN button. ACKN indication turns off.
15.	On completion of shunting, SM verifies the line between STARTER /Shunt signal/Stop Board/fouling mark and LAST STOP SIGNAL, free from any vehicle. Inserts SM key and turn. Gives call	16.	Acknowledges call attention to attend telephone.

	attention to attend telephone.		
18.	Attends telephone.	17.	Attends telephone.
20.	Inform shunting is completed supported by a Private Number.	19.	Acknowledges supported by a Private Number.
		21.	Inserts LCB and turn in.

5.7 Shunting of train

Where shunt signals are not provided for shunting on line leading towards Block section, the Loco Pilot of shunting train shall be given shunting order at the foot of STARTER SIGNAL /STOP BOARD/FOULING MARK before allowing any shunting.

i. Shunting of Train up to Last Stop Signal

While shunting, on dispatch line the LAST STOP SIGNAL is to be kept at 'ON'. SM KEY is taken OUT. The Loco Pilot of shunting train is given shunting order to shunt up to LSS. On completion of shunting, the line between STARTER/ Shunt Signal/ Stop Board/ Fouling mark and LSS are checked free from any vehicle. SM KEY is inserted and turned to IN position.

ii. Shunting behind a train

Shunting behind a train is performed with a message to a station in advance. The station in advance takes LCB Key out and kept in safe custody.

Shunting is performed as per previous paragraph. On completion of shunting, SM of sending station verifies the line between STARTER/Shunt Signal/Stop Board /fouling mark and LAST STOP SIGNAL free from any vehicle. The message regarding completion of shunting is sent to station in advance. SM of station in advance inserts LCB Key and turns to IN position.

iii. Shunting Of Train Beyond Last Stop Signal

The shunting is done under protection of Block Forward only.

iv. Shunting Of Train Towards First Stop Signal

The shunting is done under protection of Block Back only.

v. Shunting Of Train in face of an approaching Train

No shunting in face of approaching train, towards receive line is permitted, until the approaching train has been brought to a stop at first stop signal of the station. Whenever such shunting is performed, LCB Key is taken OUT

and kept in safe custody. The Loco Pilot of shunting train is given shunting order to FIRST STOP SIGNAL. On completion of shunting, the line between STARTER/SHUNT SIGNAL/STOP BOARD /FOULING MARK AND FIRST STOP SIGNAL are checked free from any vehicle and only then LCB key is inserted and turned to IN position.

6. BLOCK FAILURE

Failure of the Block panel and Last Stop Signal

(a) Failure of Block Panel :

The block panels must be considered as defective in the following cases:

(i) When no indication is available on the Block Panel.

(ii) When none of the indications viz. Train Coming From/Train Going To appears on the Block Panel except 'Line Free'.

(iii) When no train has entered into the Block Sections, but the Block Panel shows 'Line Occupied' RED indication and this indication persists even after BPAC resetting has been tried.

(iv) When TRAIN GOING TO or TRAIN COMING FROM indications do not appear by appropriate action though condition for asking 'LINE CLEAR' and granting permission to approach are available.

(v) TRAIN GOING TO or TRAIN COMING FROM indicator does not turn to RED to give TRAIN ON LINE on the entry of train into Block Section at either of the station.

(vi) When a train has arrived at the receiving station but the Block Panel still shows TRAIN ON LINE RED indication and persists even after Resetting of BPAC has been done.

(vii) When a train has arrived at the receiving station but the Block Panel shown FLASHING GREEN indication even after ensuring SNKE indicator & LCB key IN at both the station.

(viii) Total failure of communication during which train shall be worked as per extent rules in force on the Railway.

(ix) Any damage is seen or reported to block equipment i.e. Block Panel, Axle Counter, Track Devices, Axle counter equipment and block multiplexer equipment etc.

(x) When Last Stop Signal cannot be kept at 'ON' during its suspension/ disconnection.

(xi) When Last stop Signal of the station does not go back to 'ON' position on the entry of a train into the Block Section

(xii) When the Bell Code signals are received indistinctly or are not received.

Note:

(a) In all the above cases, the Block Panel must be treated as defective for block working and trains must be dealt with by taking Line Clear on Electrical communication equipments provided and by following provisions of **GR 14.13.**

(b) In respect of the failure indicated in the item number (viii) of above para trains must be dealt with under the extant rules as outlined in **SR. 6.02.**

(c) In respect of the failures indicated in the item nos (v), (ix) & (x) mention above, all efforts must be made to keep LSS in the 'ON' position. If it is not possible, then a competent railway servant should be deputed with red Hand Signal to take his position at the foot of the LSS to warn loco pilots of the approaching trains. In addition, all trains in the relevant directions should be stopped at home signal and after ensuring that they have come to stop, the home signal should be cleared to caution aspect only. The starters should not be taken off and the trains should be despatched by issue of relevant paper authority to pass the starters and the LSS at ON. Caution Order should also be issued to the Loco Pilot about the defect of the LSS.

(d) The Block Panel should not be restored for normal working until competent signalling staffs has tested & certified fit.

(e) In all the cases indicated above failures should be informed to S&T staff immediately.

(b) Failure of Last Stop Signal

The Last Stop Signal must be considered to have failed in the following cases:—

(i) The Last Stop Signal cannot be taken 'OFF' even though Line Clear has been obtained.

(ii) The Last Stop Signal can be cleared without getting Line Clear.

(iii) The Last Stop Signal does not restore to 'ON' position after the train enters the Block Section.

Note:

(a) In all the cases indicated above failures should be informed to S&T staff immediately.

(b) In respect of the cases indicated in paras (b) (i) & (iii) above the precautions indicated in Note No. (iii) and (iv) under the para, I (a) dealing with failures of the Block panels should be strictly adhered to.

7. Suspension of Block Working / Last Stop Signal

(a) Suspension of Block Working

Block Working must be suspended and trains dealt with in accordance with the extant instructions in the following cases:—

(i) When light vehicles such as material lorries, motor trolleys, tie-tamping machines, rail motor cars, Tower wagon (4-wheeler), etc., has to run in the section, these shall be worked on PLC.

(ii) An Accident in mid-section.

(iii) When any part of the Block Equipment is to be opened for repairs, it shall be done only under duly accepted disconnection notice. Block Panel working shall only be resumed by a Railway servant authorized as per extant rules in force.

Note :- As soon as the cause of suspension of block working is removed normal working can be restored by SM.

(b) Suspension of last Stop Signal

The last stop signal shall be considered and deemed to have been suspended in the following cases :-

(i) When the Last Stop Signal has been undertaken for repairs by S&T staff,

(ii) During the block back,

(iii) Mid-Section accident.

(iv) When the material lorries/trolleys, tie-tamping machines or tower wagon has to run in the section.

Note: As soon as the cause of suspension of LSS is removed normal working can be restored by SM.

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